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CHECKLIST

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An updated checklist of the European Butterflies (Lepidoptera, Papilionoidea)

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Abstract

This paper presents an updated checklist of the butterflies of Europe, together with their original name combinations, and their occurrence status in each European country. According to this checklist, 496 species of the superfamily Papilionoidea occur in Europe. Changes in comparison with the last version (2.6.2) of Fauna Europaea are discussed. Compared to that version, 16 species are new additions, either due to cryptic species most of which have been discovered by molecular methods (13 cases) or due to discoveries of Asian species on the eastern border of the European territory in the Ural mountains (three cases). On

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the other hand, nine species had to be removed from the list, because they either do not occur in Europe or lost their species status due to new evidence. In addition, three species names had to be changed and 30 species changed their combination due to new evidence on phylogenetic relationships. Furthermore, minor corrections were applied to some authors' names and years of publication. Finally, the name *Polyommatus ottomanus* Lefèbvre, 1831, which is threatened by its senior synonym *Lycaena legeri* Freyer, 1830, is declared a *nomen protectum*, thereby conserving its name in the current combination *Lycaena ottomana*.

Keywords
checklist, butterflies, Europe

Introduction

Butterflies constitute one of the best-known groups of insects and have become important models to study speciation, community ecology, biogeography, climate change, and insect-plant interactions. With close to 19,000 described species [18,768 presumably valid species recorded by 2011; that figure is higher today, i.e., ca. 19,000 species], they represent about 12% of currently known species of Lepidoptera (Van Nieukerken et al. 2011). According to current molecular systematics (Mutanen et al. 2010; Heikkilä et al. 2012; Espeland et al. 2018), the single butterfly superfamily Papilionoidea comprises 7 families (Table 1, Fig. 1) and includes the Hesperiidae (skippers) and Hedylidae (moth butterflies). The skippers have previously been thought to represent the sister group to the butterflies and were often placed in a separate superfamily Hesperioidea, but the molecular results indicate that the family Papilionidae is the sister to the remaining butterflies, which also include the small Neotropical family Hedylidae with only 36 species. Apart from the latter family, all butterfly families are represented on all continents except Antarctica, although most species of Riodinidae are confined to the Neotropical Region. Butterfly diversity is particularly high in the tropics, especially the Neotropics, and only 496 species are found in Europe according to the present checklist.

The taxonomy of butterflies started in 1758 with the Swedish naturalist Carl von Linné (Latinised to Carolus Linnaeus), who introduced binominal nomenclature and described the highest number of European butterfly species, all of them in a single genus *Papilio*. Seventy-one of them currently still hold the names given by Linné, albeit mostly in different genera. Other authors who described many new species during the 18th century were the German entomologists Eugen Johann Christoph Esper and Jacob Hübner, the Danish entomologist Johann Christian Fabricius, as well as the Austrian lepidopterist Johann Ignaz Schiffermüller (the latter in an anonymous publication usually referred to as [Denis & Schiffermüller], but see Kudrna and Belicek (2005), Sattler and Tremewan (2009) and Kudrna (2015) for a controversial debate on this topic). By 1820, half of the European butterfly fauna had been validly described, and species were placed in a growing number of genera (starting with *Hesperia* Fabricius, 1793 as the second-named genus for the skippers). During the 19th century, more than 60 European lepidopterists continued the inventory of Europe's butterfly fauna, and the first overview of Palearctic butterflies (and other Lepidoptera) was published by Seitz (1907–1909). At that time, already 90% of Europe's butterfly species had

Table 1. Family systematics of butterflies.

Superfamily Papilionoidea Latreille, [1802]	Genera*	Species*
Family Papilionidae Latreille, [1802]	32	570
Family Hedylidae Guenée, [1858]	1	36
Family Hesperiidae Latreille, 1809	570	4113
Family Pieridae Swainson, 1820	91	1164
Family Riodinidae Grote, 1895	146	1532
Family Lycaenidae [Leach], [1815]	416	5201
Family Nymphalidae Rafinesque, 1815	559	6152

* global number of genera and species according to van Nieukerken et al. (2011)

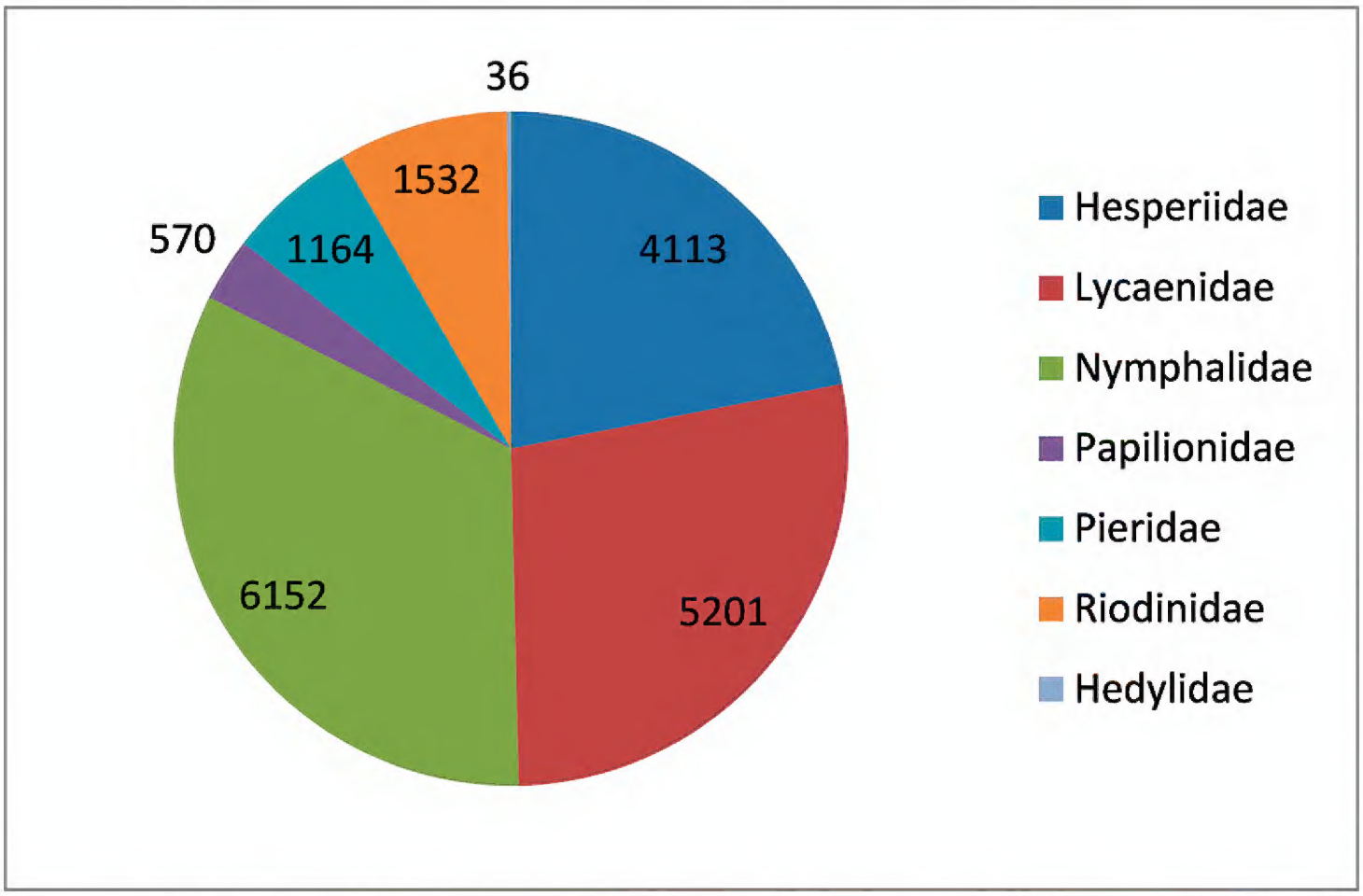

Figure 1. Global species richness of butterfly families.

been described and the rate of newly discovered species slowed down (Fig. 2). Another milestone for butterfly research in Europe was the field guide of Higgins and Riley (1970), which included distribution maps of Western Palearctic butterflies, and led to a growing interest in butterflies across Europe. This field guide was also translated into other languages (e.g., German, French, and Spanish) and updated several times (most recently by Tolman and Lewington 2008). However, despite their somehow misleading titles, these guides excluded large parts of eastern Europe (i.e., Belarus, Ukraine, Moldova and most of Russia (apart from Kaliningrad enclave) and therefore all the species from the Ural mountains). The proliferation of butterfly field guides by various authors across Europe also led to an increasing confusion of butterfly nomenclature due to different taxonomic concepts. The first step to standardize European butterfly

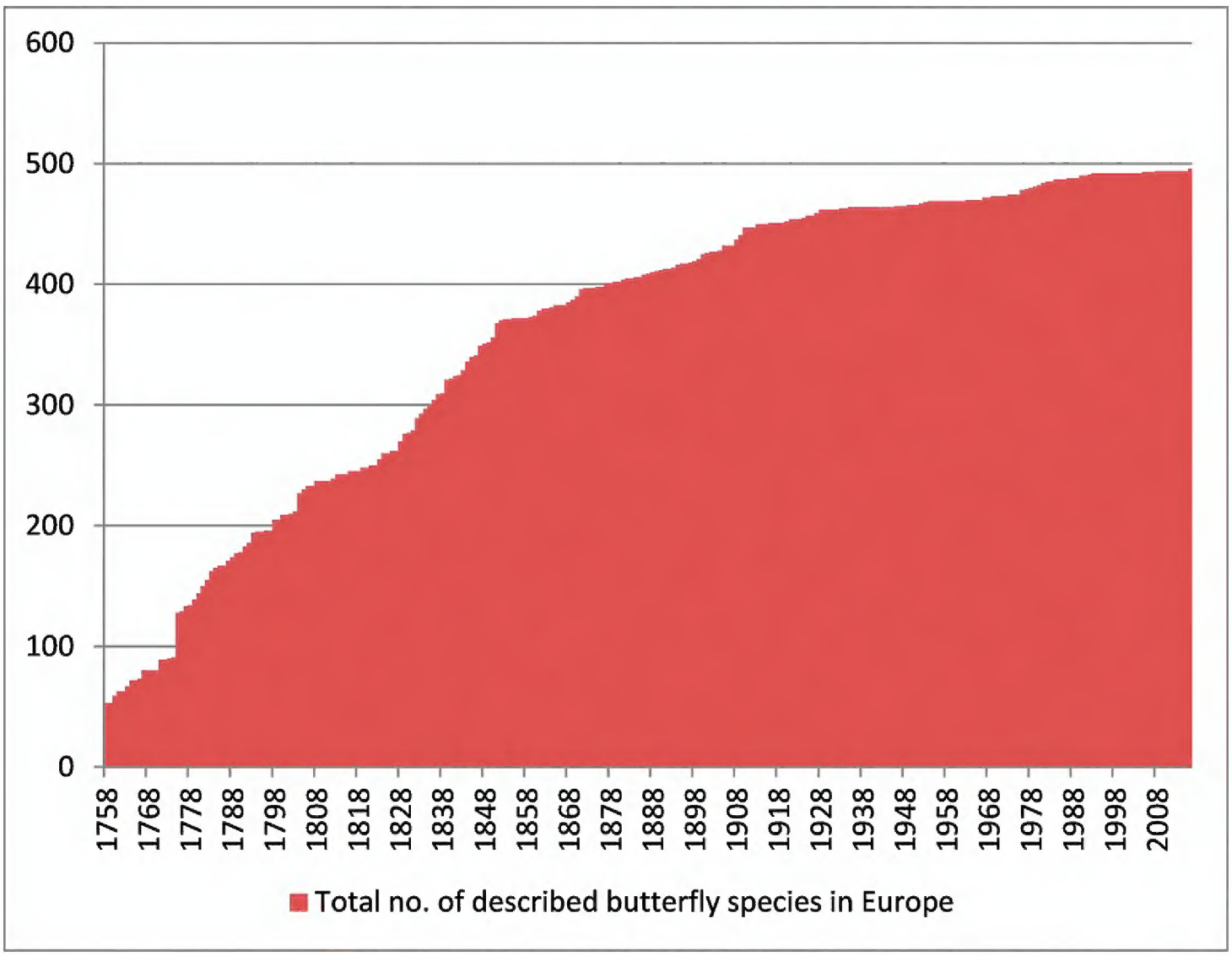

Figure 2. Cumulative number of described European butterfly species per year according to current taxonomy.

taxonomy and the precursor of our list was the book (and accompanying CD) by Karsholt and Razowski (1996). It constituted a country-level checklist of all European Lepidoptera, but excluding the Mid-Atlantic islands (i.e., Canary Islands, Madeira, and Azores) and contained 440 butterfly species. This book was also the basis for the list of Lepidoptera in the online database Fauna Europaea, a project under the auspices of the European Commission, which started in 2000 (De Jong et al. 2014) and aimed to provide checklists for all European animal species. This database, which went online on 16 December 2004, also included Cyprus and the Mid-Atlantic islands, which are hotspots of narrow endemics. At about the same time, the first distribution atlas of all European butterflies was published by Kudrna (2002), and finally a butterfly field guide appeared which covered most of the West Palearctic region including all of Europe (Tshikolovets 2011).

The last comprehensive update of the butterfly checklist in Fauna Europaea happened 7 years ago (Karsholt and Nieukerken 2011), and the checklist presented here was first developed as an update to the online database. Unfortunately, funding for Fauna Europaea was discontinued after the initial 4-years funding period and the outdated Fauna Europaea website was only saved due to the commitment of the Natural History Museum in Berlin that set up a new one. However, its functionality is still very

limited and the update process severely hampered due to shortage of funding. For this reason, we decided to publish this updated distributional checklist in order to address the need of the lepidopterological community and the public at large. It intends to cover the significant progress in butterfly systematics and faunistics, which was brought about in particular by the advancement of molecular methods.

Materials and methods

This updated checklist is based on the last version of Fauna Europaea (2.6.2). This version is almost identical to the most recent Lepidoptera update in version 2.4 (online on 28 January 2011) but includes some emendations by the staff of the Fauna Europaea office in Berlin that had not been approved by the Lepidoptera group coordinators (Erik van Nieukerken and Ole Karsholt). The geographic area covered remains the same: It includes the European mainland to the eastern slopes of the Ural mountains, plus the Macaronesian islands (excluding the Cape Verde Islands) and Cyprus, with the Caucasus and western Kazakhstan excluded (Fig. 3). Included are the British Isles and all Mediterranean islands under European administration, as well as the Greek offshore islands along the Turkish coastline. Iceland has no native butterfly species. Distributional information is based on political units at country level as in Fauna Europaea, following the ISO-3166 code. However, with the exception of the Macaronesian Islands, the additional regional splits of several countries in Fauna Europaea (mainly for Russia and some island territories) were not adopted.

The following categories are used to explain the distribution:

A Absent (never recorded in the respective country or island group or only doubtful records)

P Present (native or well-established populations, including alien species such as the South African *Cacyreus marshalli*)

P? Possibly present (recorded but continued presence doubtful; usually these are species with range limits near the border of the respective country)

M Regular migrant (species which has no permanent populations, e.g., because it cannot overwinter, but is observed almost every year; included are extinct species if they are still observed as regular migrants)

I Irregular vagrant (irregular vagrants or introductions which do not reproduce or only irregularly, including temporary or recently established populations)

Ex Regionally extinct (native species which have become extinct, even though vagrants might be seen occasionally)

It should be noted that the "Extinct" category is used in a rather strict sense, in line with the IUCN Guidelines which demand that exhaustive surveys have been undertaken to prove that 'there is no reasonable doubt that the last individual has died'. In some cases, this has led to species being recorded as "Present", even though they are most probably

Figure 3. Boundaries of Europe according to Fauna Europaea (from de Jong et al. 2014).

extinct, e.g., *Colias myrmidone* in Austria (no proof for more than 25 years; H. Höttinger, pers. comm.). In addition, some of the national Red List Assessments are already outdated, even though attempts have been made to update those. An example for an update is the status of the Madeiran endemic *Pieris wollastoni*, whose last reliable record is from 1986. It was classified as "Critically Endangered (Possibly Extinct)" in its last Red List assessment (Van Swaay et al. 2010), but is now classified as "Extinct", because extensive surveys in recent years have failed to prove its continued presence. This is the only European butterfly species which is known to have become globally extinct in historical times.

According to the concept of Fauna Europaea, changes were only carried out if supported by newly published research. This restriction helps to stabilize nomenclature, but can also lead to inconsistent results, e.g., due to the retention of some weakly differentiated taxa, whose species status is questionable, but for which no new published evidence is available. Potential examples in our list are *Lysandra caelestissima* (Verity, 1921), *Polyommatus nephohiptamenos* (Brown & Coutsis, 1978), *Hipparchia neapolitana* (Stauder, 1921), *Hipparchia sbordonii* Kudrna, 1984, *Satyrus virbius* Herrich-Schäffer, 1844, and *Pieris balcana* Lorković, 1969.

The main criterion whether to include or exclude a species taxon based on new (and possibly contradictory) publications was evidence for species status from at least two character sets, e.g., mitochondrial as well as nuclear DNA, or differences in morphology and karyology.

Nomenclatural changes are annotated with reference to the sources and strictly follow the last (fourth) edition of the International Code of Zoological Nomenclature (ICZN 1999). This includes the controversial article 34.2, which mandates that »the ending of a Latin or Latinised adjectival or participial species-group name must agree in gender with the generic name with which it is at any time combined«. Due to its linguistic complexity, this rule has led to many wrong or ambiguous decisions and causes additional instability of nomenclature each time a species name is transferred to another genus. Therefore a majority of lepidopterists, including the group editors of Fauna Europaea, have decided to ignore this rule and use the original spelling instead (de Jong et al. 2014). Difficulties with the gender agreement rule in Lepidoptera are as old as binominal nomenclature, because there is not even an agreement about the gender of the genus *Papilio*. Therefore Carl von Linné used nouns as species names and avoided the use of adjectives (Welter-Schultes 2013). However, for easy reference to Fauna Europaea and other databases, we also list the original ending and compiled a comprehensive list of original combinations, using various sources such as the LepIndex (Beccaloni et al. 2003), PESI (2018), FUNET (Savela 2018) and Tshikolovets (2011). In case of doubts or discrepancies, the original publications were checked as well.

In a few cases, necessary changes due to new nomenclatural findings have not been carried out yet, because they would result in the replacement of a well-established name by an (almost) unknown synonym. Such cases should be referred to the International Commission on Zoological Nomenclature for ruling, and changes implemented only after a decision has been made by the Commission. One such case is the well-established name *Parnassius phoebus*, which has turned out to represent another Asian *Parnassius* species which is currently known as *Parnassius ariadne* (Lederer, 1853) (see Hanus and Thèye 2010) and would thus need to be replaced. After the first attempt to preserve this name (Balletto and Bonelli 2014) failed (ICZN 2017), a second proposal has recently been submitted to the Commission (Lukhtanov et al. in press). According to article 82.1 of the code, prevailing usage has to be maintained until the case has been decided by the Commission.

An exceptional case which would cause a large number of changes in the names of Lepidoptera are many of the names published by [Denis & Schiffermüller] (1775) which are lacking a sufficient description, but have already been used for a very long time. In accordance with the opinion of the Fauna Europaea editorial team, we have not replaced these names. The effect on butterfly taxonomy would be rather marginal, however, because only one butterfly species would have to change its name (*Nymphalis vaualbum* to *Nymphalis l-album* (Esper, 1781)) and five others only their authorship, see Kudrna and Belicek (2005). We are looking forward to a decision of the ICZN to solve this matter (see Kudrna 2015).

Another case concerns the genus name *Muschampia* Tutt, 1906 (type species: *Papilio proto* Ochsenheimer, 1808; currently known as *Muschampia proto* (Ochsenheimer, 1808)), which appears to be a subjective synonym of the genus name *Sloperia* Tutt, 1906 (type species: *Hesperia poggei* Lederer, 1858; currently known as *Muschampia poggei* (Lederer, 1858)). Both genus names were published in the same paper and

Hemming (1967) was the first to note that *Sloperia* should have precedence over *Muschampia*, because Warren (1926) as the first reviser chose *Sloperia*. However, the name *Muschampia* has remained in prevailing use during the last 90 years and, in addition, there is evidence from molecular data (Wiemers et al. unpublished) that the current classification of the species presently placed in the genera *Carcharodus* and *Muschampia* needs to be substantially revised. However, molecular data are still missing for most of the (mainly Asian) species currently placed in *Muschampia*, and therefore we suggest to postpone a rearrangement until better data become available.

Finally, one of us (GL) discovered that *Polyommatus ottomanus* Lefèbvre was published in 1831 (and not in 1830) and therefore has to be regarded as a subjective junior synonym of *Lycaena legeri* Freyer, 1830. This would mean that the well-established name of the species currently known as *Lycaena ottomana* (Lefèbvre, [1831]) would need to be changed to a name which has not been used for this species during the past century. However, according to article 23.9.1 of the Code, the prevailing usage must be maintained when the senior synonym (i.e., *legeri* Freyer) has not been used as a valid name after 1899 (article 23.9.1.1), and the junior synonym has been used, as its presumed valid name, in at least 25 works, published by at least ten authors during the last 50 years and encompassing a span of not less than ten years (article 23.9.1.2). In our opinion, the condition of article 23.9.1.1 applies in this case, and evidence that the conditions of article 23.9.1.2 are met, are given in Appendix 1 herein. Therefore, we regard the name *Lycaena legeri* Freyer as invalid and qualified as a *nomen oblitum* and declare the name *Lycaena ottomana* Lefèbvre as valid and qualified as a *nomen protectum*, which has precedence over the former as long as both names are thought to represent subjective synonyms.

Results and discussion

The updated species list of European butterflies includes 496 species, which belong to 110 genera in 21 subfamilies and six families (Tables 2 and 4; Fig. 4). A list of main authors with some additional data is given in Table 5. An electronic version of the checklist that includes a country-based distributional checklist is found in Suppl. material 1, Suppl. material 2.

Compared to the last version 2.6.2 of Fauna Europaea, nine species have been excluded from the list (Table 6). On the other hand, 15 species were added to the list. Another recently discovered species, *Spialia rosae* Hernández-Roldán, Dapporto, Dincă, Vicente & Vila, 2016, has already been added to the Fauna Europaea database.

Apart from the changes due to the gender agreement provision (Table 7), only three species names had to be changed due to new nomenclatural evidence: *Pyrgus bellieri* (Oberthür, 1910) to *Pyrgus foulquieri* (a name which had already been used in previous field guides), *Proterebia afra* (Fabricius, 1787) to *Proterebia phegea* (hopefully solving a longstanding controversy, see e.g., Jutzeler and Lafranchis 2011), and the mandatory change of *Pseudochazara hippolyte* (Esper, 1783) to *Pseudochazara mercurius* due to primary homonomy.

Table 2. Updated checklist of the butterflies of Europe.

Taxon	Original combination	Notes
Papilionidae		
Papilioninae		
Iphiclides podalirius (Linnaeus, 1758)	*Papilio podalirius*	
Iphiclides feisthamelii (Duponchel, 1832)	*Papilio feisthamelii*	1
Papilio alexanor Esper, 1800	*Papilio alexanor*	
Papilio machaon Linnaeus, 1758	*Papilio machaon*	
Papilio hospiton Gené, 1839	*Papilio hospiton*	2
Parnassiinae		
Parnassius mnemosyne (Linnaeus, 1758)	*Papilio mnemosyne*	
Parnassius phoebus (Fabricius, 1793)	*Papilio phoebus*	
Parnassius apollo (Linnaeus, 1758)	*Papilio apollo*	
Archon apollinus (Herbst, 1798)	*Papilio apollinus*	
Zerynthia cerisy (Godart, [1824])	*Thais cerisy*	
Zerynthia cretica (Rebel, 1904)	*Thais cerisyi cretica*	
Zerynthia caucasica (Lederer, 1864)	*Thais cerisyi caucasica*	
Zerynthia rumina (Linnaeus, 1758)	*Papilio rumina*	
Zerynthia polyxena ([Denis & Schiffermüller], 1775)	*Papilio polyxena*	
Zerynthia cassandra (Geyer, [1828])	*Papilio cassandra*	3
Hesperiidae		
Heteropterinae		
Heteropterus morpheus (Pallas, 1771)	*Papilio morpheus*	
Carterocephalus silvicola (Meigen, 1829)	*Hesperia silvicola*	
Carterocephalus palaemon (Pallas, 1771)	*Papilio palaemon*	
Hesperiinae		
Pelopidas thrax (Hübner, [1821])	*Gegenes thrax*	
Borbo borbonica (Boisduval, 1833)	*Hesperia borbonica*	
Gegenes pumilio (Hoffmansegg, 1804)	*Papilio pumilio*	
Gegenes nostrodamus (Fabricius, 1793)	*Hesperia nostrodamus*	
Ochlodes sylvanus (Esper, 1777)	*Papilio sylvanus*	
Hesperia comma (Linnaeus, 1758)	*Papilio comma*	
Thymelicus christi Rebel, 1894	*Thymelicus christi*	
Thymelicus acteon (Rottemburg, 1775)	*Papilio acteon*	
Thymelicus hyrax (Lederer, 1861)	*Hesperia hyrax*	
Thymelicus sylvestris (Poda, 1761)	*Papilio sylvestris*	
Thymelicus lineola (Ochsenheimer, 1808)	*Papilio lineola*	
Pyrginae		
Spialia phlomidis (Herrich-Schäffer, 1845)	*Hesperia phlomidis*	
Spialia sertorius (Hoffmansegg, 1804)	*Hesperia sertorius*	
Spialia therapne (Rambur, 1832)	*Hesperia therapne*	
Spialia rosae Hernández-Roldán, Dapporto, Dincă, Vicente & Vila, 2016	*Spialia rosae*	4
Spialia orbifer (Hübner, [1823])	*Papilio orbifer*	
Carcharodus tripolinus (Verity, 1925)	*Erynnis alceae tripolina*	5
Carcharodus alceae (Esper, 1780)	*Papilio alceae*	
Muschampia cribrellum (Eversmann, 1841)	*Hesperia cribrellum*	
Muschampia tessellum (Hübner, [1803])	*Papilio tessellum*	
Muschampia proto (Ochsenheimer, 1808)	*Papilio proto*	

Taxon	Original combination	Notes
Carcharodus lavatherae (Esper, 1783)	*Papilio lavatherae*	
Carcharodus orientalis Reverdin, 1913	*Carcharodus orientalis*	
Carcharodus floccifera (Zeller, 1847)	*Hesperia floccifera*	
Carcharodus stauderi Reverdin, 1913	*Carcharodus stauderi*	
Carcharodus baeticus (Rambur, 1839)	*Spilothyrus baeticus*	
Erynnis tages (Linnaeus, 1758)	*Papilio tages*	
Erynnis marloyi (Boisduval, 1834)	*Thanaos marloyi*	
Pyrgus malvoides (Elwes & Edwards, 1897)	*Hesperia malvoides*	
Pyrgus malvae (Linnaeus, 1758)	*Papilio malvae*	
Pyrgus carthami (Hübner, [1813])	*Papilio carthami*	
Pyrgus sidae (Esper, 1784)	*Papilio sidae*	
Pyrgus centaureae (Rambur, 1839)	*Hesperia centaureae*	
Pyrgus cacaliae (Rambur, 1839)	*Hesperia cacaliae*	
Pyrgus andromedae (Wallengren, 1853)	*Syrichtus andromedae*	
Pyrgus serratulae (Rambur, 1839)	*Hesperia serratulae*	
Pyrgus armoricanus (Oberthür, 1910)	*Syrichthus armoricanus*	
Pyrgus alveus (Hübner, [1803])	*Papilio alveus*	
Pyrgus warrenensis (Verity, 1928)	*Hesperia warrenensis*	
Pyrgus foulquieri (Oberthür, 1910)	*Syrichthus alveus foulquieri*	6
Pyrgus onopordi (Rambur, 1839)	*Hesperia onopordi*	
Pyrgus carlinae (Rambur, 1839)	*Hesperia carlinae*	
Pyrgus cirsii (Rambur, 1839)	*Hesperia cirsii*	
Pyrgus cinarae (Rambur, 1839)	*Hesperia cinarae*	
Pieridae		
Dismorphiinae		
Leptidea duponcheli (Staudinger, 1871)	*Leucophasia duponcheli*	
Leptidea morsei (Fenton, 1882)	*Leptosia morsei*	
Leptidea juvernica Williams, 1946	*Leptidea sinapis juvernica*	7
Leptidea sinapis (Linnaeus, 1758)	*Papilio sinapis*	
Leptidea reali Reissinger, 1990	*Leptidea sinapis reali*	
Coliadinae		
Gonepteryx rhamni (Linnaeus, 1758)	*Papilio rhamni*	
Gonepteryx cleobule (Hübner, [1831])	*Anteos cleobule*	8
Gonepteryx cleopatra (Linnaeus, 1767)	*Papilio cleopatra*	
Gonepteryx maderensis C. Felder, 1862	*Gonopteryx cleopatra maderensis*	
Gonepteryx farinosa (Zeller, 1847)	*Rhodocera farinosa*	
Catopsilia florella (Fabricius, 1775)	*Papilio florella*	
Colias hyale (Linnaeus, 1758)	*Papilio hyale*	
Colias alfacariensis Ribbe, 1905	*Colias hyale alfacariensis*	
Colias phicomone (Esper, [1780])	*Papilio phicomone*	
Colias aurorina Herrich-Schäffer, 1850	*Colias aurorina*	
Colias chrysotheme (Esper, [1781])	*Papilio chrysotheme*	
Colias erate (Esper, [1805])	*Papilio erate*	
Colias crocea (Geoffroy, 1785)	*Papilio croceus*	5, 9
Colias myrmidone (Esper, [1781])	*Papilio myrmidone*	
Colias caucasica Staudinger, 1871	*Colias myrmidone caucasica*	
Colias palaeno (Linnaeus, [1760])	*Papilio palaeno*	10
Colias tyche (Böber, 1812)	*Papilio tyche*	

Taxon	Original combination	Notes
Colias hecla Lefèbvre, 1836	*Colias hecla*	
Pierinae		
Colotis evagore (Klug, 1829)	*Pontia evagore*	
Aporia crataegi (Linnaeus, 1758)	*Papilio crataegi*	
Pontia chloridice (Hübner, [1813])	*Papilio chloridice*	
Pontia callidice (Hübner, [1800])	*Papilio callidice*	
Pontia edusa (Fabricius, 1777)	*Papilio edusa*	
Pontia daplidice (Linnaeus, 1758)	*Papilio daplidice*	
Pieris krueperi Staudinger, 1860	*Pieris krueperi*	
Pieris brassicae (Linnaeus, 1758)	*Papilio brassicae*	
Pieris wollastoni (Butler, 1886)	*Ganoris wollastoni*	
Pieris cheiranthi (Hübner, [1808])	*Papilio cheiranthi*	
Pieris rapae (Linnaeus, 1758)	*Papilio rapae*	
Pieris mannii (Mayer, 1851)	*Pontia mannii*	
Pieris ergane (Geyer, [1828])	*Papilio ergane*	
Pieris bryoniae (Hübner, [1806])	*Papilio bryoniae*	
Pieris napi (Linnaeus, 1758)	*Papilio napi*	
Pieris balcana Lorković, [1969]	*Pieris balcana*	11
Euchloe tagis (Hübner, [1804])	*Papilio tagis*	
Euchloe eversi Stamm, 1963	*Euchloe belemia eversi*	
Euchloe grancanariensis Acosta, 2008	*Euchloe belemia grancanariensis*	
Euchloe hesperidum Rothschild, 1913	*Euchloe belemia hesperidum*	
Euchloe belemia (Esper, 1800)	*Papilio belemia*	
Euchloe insularis (Staudinger, 1861)	*Anthocharis tagis insularis*	
Euchloe crameri Butler, 1869	*Euchloe crameri*	
Euchloe simplonia (Freyer, 1829)	*Pontia simplonia*	
Euchloe ausonia (Hübner, [1804])	*Papilio ausonia*	
Euchloe charlonia (Donzel, 1842)	*Anthocharis charlonia*	
Euchloe penia (Freyer, 1851)	*Pontia penia*	
Euchloe bazae Fabiano, 1993	*Euchloe charlonia bazae*	
Zegris pyrothoe (Eversmann, 1832)	*Pontia pyrothoe*	
Zegris eupheme (Esper, [1804])	*Papilio eupheme*	
Anthocharis euphenoides Staudinger, 1869	*Anthocharis euphenoides*	
Anthocharis cardamines (Linnaeus, 1758)	*Papilio cardamines*	
Anthocharis gruneri Herrich-Schäffer, 1851	*Anthocharis gruneri*	
Anthocharis damone Boisduval, 1836	*Anthocharis damone*	
Riodinidae		
Nemeobiinae		
Hamearis lucina (Linnaeus, 1758)	*Papilio lucina*	
Lycaenidae		
Lycaeninae		
Lycaena dimorpha (Staudinger, 1881)	*Polyommatus dimorphus*	5, 12
Lycaena helle ([Denis & Schiffermüller], 1775)	*Papilio helle*	
Lycaena alciphron (Rottemburg, 1775)	*Papilio alciphron*	
Lycaena thetis Klug, 1834	*Lycaena thetis*	
Lycaena thersamon (Esper, 1784)	*Papilio thersamon*	
Lycaena dispar ([Haworth], 1802)	*Papilio dispar*	
Lycaena hippothoe (Linnaeus, [1760])	*Papilio hippothoe*	10

Taxon	Original combination	Notes
Lycaena candens (Herrich-Schäffer, 1844)	*Polyommatus candens*	
Lycaena ottomana (Lefèbvre, [1831])	*Polyommatus ottomanus*	5, 13
Lycaena bleusei (Oberthür, 1884)	*Polyommatus xanthe* f. *bleusei*	
Lycaena phlaeas (Linnaeus, [1760])	*Papilio phlaeas*	10
Lycaena virgaureae (Linnaeus, 1758)	*Papilio virgaureae*	
Lycaena tityrus (Poda, 1761)	*Papilio tityrus*	
Aphnaeinae		
Cigaritis acamas (Klug, 1834)	*Lycaena acamas*	14
Theclinae		
Thecla betulae (Linnaeus, 1758)	*Papilio betulae*	
Favonius quercus (Linnaeus, 1758)	*Papilio quercus*	
Laeosopis roboris (Esper, [1793])	*Papilio roboris*	15
Tomares ballus (Fabricius, 1787)	*Papilio ballus*	
Tomares nogelii (Herrich-Schäffer, 1851)	*Thecla nogelii*	
Tomares callimachus (Eversmann, 1848)	*Lycaena callimachus*	
Callophrys avis Chapman, 1909	*Callophrys avis*	
Callophrys suaveola (Staudinger, 1881)	*Thecla suaveola*	
Callophrys rubi (Linnaeus, 1758)	*Papilio rubi*	
Callophrys chalybeitincta Sovinsky, 1905	*Callophrys rubi chalybeitincta*	
Neolycaena rhymnus (Eversmann, 1832)	*Lycaena rhymnus*	
Satyrium pruni (Linnaeus, 1758)	*Papilio pruni*	
Satyrium ilicis (Esper, 1779)	*Papilio ilicis*	
Satyrium esculi (Hübner, [1804])	*Papilio esculi*	
Satyrium ledereri (Boisduval, 1848)	*Lycaena ledereri*	
Satyrium w-album (Knoch, 1782)	*Papilio w-album*	
Satyrium spini ([Denis & Schiffermüller], 1775)	*Papilio spini*	
Satyrium acaciae (Fabricius, 1787)	*Papilio acaciae*	
Polyommatinae		
Leptotes pirithous (Linnaeus, 1767)	*Papilio pirithous*	
Cyclyrius webbianus (Brullé, 1839)	*Polyommatus webbianus*	
Azanus ubaldus (Stoll, 1782)	*Papilio ubaldus*	
Azanus jesous (Guérin-Méneville, 1849)	*Polyommatus jesous*	
Lampides boeticus (Linnaeus, 1767)	*Papilio boeticus*	
Cacyreus marshalli Butler, 1898	*Cacyreus marshalli*	
Celastrina argiolus (Linnaeus, 1758)	*Papilio argiolus*	
Tarucus theophrastus (Fabricius, 1793)	*Hesperia theophrastus*	
Tarucus balkanicus (Freyer, 1844)	*Lycaena balkanica*	5
Phengaris alcon ([Denis & Schiffermüller], 1775)	*Papilio alcon*	
Phengaris arion (Linnaeus, 1758)	*Papilio arion*	
Phengaris teleius (Bergsträsser, 1779)	*Papilio teleius*	
Phengaris nausithous (Bergsträsser, 1779)	*Papilio nausithous*	
Turanana taygetica (Rebel, 1902)	*Lycaena panagaea taygetica*	
Pseudophilotes bavius (Eversmann, 1832)	*Lycaena bavius*	
Pseudophilotes barbagiae De Prins & van der Poorten, 1982	*Pseudophilotes barbagiae*	
Pseudophilotes abencerragus (Pierret, 1837)	*Argus abencerragus*	
Pseudophilotes panoptes (Hübner, [1813])	*Papilio panoptes*	
Pseudophilotes vicrama (Moore, 1865)	*Polyommatus vicrama*	
Pseudophilotes baton (Bergsträsser, 1779)	*Papilio baton*	

Taxon	Original combination	Notes
Scolitantides orion (Pallas, 1771)	*Papilio orion*	
Praephilotes anthracias (Christoph, 1877)	*Lycaena anthracias*	
Iolana iolas (Ochsenheimer, 1816)	*Lycaena iolas*	
Iolana debilitata (Schultz, 1905)	*Lycaena jolas* var. *debilitata*	16
Glaucopsyche melanops (Boisduval, 1828)	*Polyommatus melanops*	
Glaucopsyche paphos Chapman, 1920	*Glaucopsyche paphos*	
Glaucopsyche alexis (Poda, 1761)	*Papilio alexis*	
Zizeeria knysna (Trimen, 1862)	*Lycaena knysna*	
Zizeeria karsandra (Moore, 1865)	*Polyommatus karsandra*	
Tongeia fischeri (Eversmann, 1843)	*Lycaena fischeri*	
Cupido argiades (Pallas, 1771)	*Papilio argiades*	
Cupido decoloratus (Staudinger, 1886)	*Lycaena argiades decolorata*	5
Cupido alcetas (Hoffmansegg, 1804)	*Papilio alcetas*	
Cupido osiris (Meigen, 1829)	*Polyommatus osiris*	
Cupido minimus (Fuessly, 1775)	*Papilio minimus*	
Cupido lorquinii (Herrich-Schäffer, 1850)	*Lycaena lorquinii*	17
Luthrodes galba (Lederer, 1855)	*Lycaena galba*	18
Freyeria trochylus (Freyer, 1844)	*Lycaena trochylus*	18,19
Plebejus argus (Linnaeus, 1758)	*Papilio argus*	
Plebejus idas (Linnaeus, [1760])	*Papilio idas*	10
Plebejus bellieri (Oberthür, 1910)	*Lycaena bellieri*	
Plebejus argyrognomon (Bergsträsser, 1779)	*Papilio argyrognomon*	
Agriades orbitulus (Prunner, 1798)	*Papilio orbitulus*	18
Agriades optilete (Knoch, 1781)	*Papilio optilete*	18
Agriades pyrenaicus (Boisduval, 1840)	*Lycaena orbitulus* var. *pyrenaica*	5, 18
Agriades dardanus (Freyer, 1843)	*Lycaena dardanus*	18
Agriades zullichi Hemming, 1933	*Agriades zullichi*	18
Agriades glandon (Prunner, 1798)	*Papilio glandon*	18
Agriades aquilo (Boisduval, 1832)	*Argus aquilo*	18
Plebejidea loewii (Zeller, 1847)	*Lycaena loewii*	18
Eumedonia eumedon (Esper, 1780)	*Papilio eumedon*	18
Kretania psylorita (Freyer, 1845)	*Lycaena psylorita*	18
Kretania hesperica (Rambur, 1839)	*Polyommatus hespericus*	5, 18
Kretania eurypilus (Freyer, 1851)	*Lycaena eurypilus*	18
Kretania trappi (Verity, 1927)	*Lycaena trappi*	18
Kretania sephirus (Frivaldszky, 1835)	*Lycaena sephirus*	18
Kretania pylaon (Fischer, 1832)	*Lycaena pylaon*	18
Cyaniris semiargus (Rottemburg, 1775)	*Papilio semiargus*	
Glabroculus cyane (Eversmann, 1837)	*Lycaena cyane*	18
Aricia morronensis (Ribbe, 1910)	*Lycaena idas morronensis*	
Aricia anteros (Freyer, 1838)	*Lycaena anteros*	
Aricia cramera (Eschscholtz, 1821)	*Lycaena cramera*	
Aricia nicias (Meigen, 1829)	*Polyommatus nicias*	20
Aricia artaxerxes (Fabricius, 1793)	*Hesperia artaxerxes*	
Aricia montensis Verity, 1928	*Aricia medon montensis*	
Aricia agestis ([Denis & Schiffermüller], 1775)	*Papilio agestis*	
Neolysandra coelestina (Eversmann, 1843)	*Lycaena coelestina*	18
Lysandra hispana (Herrich-Schäffer, 1851)	*Lycaena coridon* var. *hispana*	18

Taxon	Original combination	Notes
Lysandra corydonius (Herrich-Schäffer, 1852)	*Lycaena coridon corydonius*	18
Lysandra bellargus (Rottemburg, 1775)	*Papilio bellargus*	18
Lysandra coridon (Poda, 1761)	*Papilio coridon*	18
Lysandra caelestissima (Verity, 1921)	*Agriades coridon caelestissima*	18
Lysandra albicans (Gerhard, 1851)	*Lycaena coridon* var. *albicans*	18
Polyommatus escheri (Hübner, [1823])	*Papilio escheri*	
Polyommatus thersites (Cantener, 1835)	*Argus thersites*	
Polyommatus daphnis ([Denis & Schiffermüller], 1775)	*Papilio daphnis*	
Polyommatus amandus (Schneider, 1792)	*Papilio amandus*	
Polyommatus golgus (Hübner, [1813])	*Papilio golgus*	
Polyommatus nivescens (Keferstein, 1851)	*Lycaena dorylas* var. *nivescens*	
Polyommatus dorylas ([Denis & Schiffermüller], 1775)	*Papilio dorylas*	
Polyommatus celina (Austaut, 1879)	*Lycaena celina*	21
Polyommatus icarus (Rottemburg, 1775)	*Papilio icarus*	
Polyommatus eros (Ochsenheimer, 1808)	*Papilio eros*	
Polyommatus damon ([Denis & Schiffermüller], 1775)	*Papilio damon*	
Polyommatus damone (Eversmann, 1841)	*Lycaena damone*	
Polyommatus damocles (Herrich-Schäffer, 1844)	*Lycaena damocles*	
Polyommatus admetus (Esper, 1783)	*Papilio admetus*	
Polyommatus ripartii (Freyer, 1830)	*Lycaena ripartii*	
Polyommatus nephohiptamenos (Brown & Coutsis, 1978)	*Agrodiaetus nephohiptamenos*	
Polyommatus iphigenia (Herrich-Schäffer, 1847)	*Lycaena iphigenia*	
Polyommatus violetae (Gómez-Bustillo, Expósito & Martínez, 1979)	*Agrodiaetus violetae*	
Polyommatus fulgens (Sagarra, 1925)	*Hirsutina dolus* r. *fulgens*	22
Polyommatus fabressei (Oberthür, 1910)	*Lycaena rippertii* r. *fabressei*	
Polyommatus dolus (Hübner, [1823])	*Papilio dolus*	
Polyommatus humedasae (Toso & Balletto, 1976)	*Agrodiaetus humedasae*	
Polyommatus timfristos Lukhtanov, Vishnevskaya & Shapoval, 2016	*Polyommatus timfristos*	23
Polyommatus orphicus Kolev, 2005	*Polyommatus orphicus*	
Polyommatus aroaniensis (Brown, 1976)	*Agrodiaetus alcestis aroaniensis*	
Nymphalidae		
Limenitidinae		
Neptis sappho (Pallas, 1771)	*Papilio sappho*	
Neptis rivularis (Scopoli, 1763)	*Papilio rivularis*	
Limenitis reducta Staudinger, 1901	*Limenitis camilla reducta*	
Limenitis populi (Linnaeus, 1758)	*Papilio populi*	
Limenitis camilla (Linnaeus, 1764)	*Papilio camilla*	
Heliconiinae		
Issoria lathonia (Linnaeus, 1758)	*Papilio lathonia*	
Issoria eugenia (Eversmann, 1847)	*Argynnis eugenia*	
Brenthis hecate ([Denis & Schiffermüller], 1775)	*Papilio hecate*	
Brenthis ino (Rottemburg, 1775)	*Papilio ino*	
Brenthis daphne ([Denis & Schiffermüller], 1775)	*Papilio daphne*	
Argynnis paphia (Linnaeus, 1758)	*Papilio paphia*	
Argynnis pandora ([Denis & Schiffermüller], 1775)	*Papilio pandora*	
Argynnis laodice (Pallas, 1771)	*Papilio laodice*	
Speyeria aglaja (Linnaeus, 1758)	*Papilio aglaja*	24

Taxon	Original combination	Notes
Fabriciana elisa (Godart, 1823)	*Argynnis elisa*	24
Fabriciana niobe (Linnaeus, 1758)	*Papilio niobe*	24
Fabriciana adippe ([Denis & Schiffermüller], 1775)	*Papilio adippe*	24
Boloria eunomia (Esper, 1800)	*Papilio eunomia*	25
Boloria graeca (Staudinger, 1870)	*Argynnis pales graeca*	
Boloria pales ([Denis & Schiffermüller], 1775)	*Papilio pales*	
Boloria alaskensis (Holland, 1900)	*Argynnis alaskensis*	
Boloria napaea (Hoffmansegg, 1804)	*Papilio napaea*	
Boloria aquilonaris (Stichel, 1908)	*Argynnis aquilonaris*	
Boloria tritonia (Böber, 1812)	*Papilio tritonia*	
Boloria polaris (Boisduval, 1828)	*Argynnis polaris*	
Boloria thore (Hübner, [1804])	*Papilio thore*	26
Boloria selene ([Denis & Schiffermüller], 1775)	*Papilio selene*	
Boloria euphrosyne (Linnaeus, 1758)	*Papilio euphrosyne*	
Boloria dia (Linnaeus, 1767)	*Papilio dia*	
Boloria improba (Butler, 1877)	*Argynnis improba*	
Boloria frigga (Thunberg, 1791)	*Papilio frigga*	27
Boloria freija (Thunberg, 1791)	*Papilio freija*	27
Boloria selenis (Eversmann, 1837)	*Argynnis selenis*	
Boloria oscarus (Eversmann, 1844)	*Argynnis oscarus*	
Boloria titania (Esper, [1793])	*Papilio titania*	
Boloria chariclea (Schneider, 1794)	*Papilio chariclea*	
Boloria angarensis (Erschoff, 1870)	*Argynnis angarensis*	
Apaturinae		
Apatura iris (Linnaeus, 1758)	*Papilio iris*	
Apatura metis Freyer, 1829	*Apatura metis*	
Apatura ilia ([Denis & Schiffermüller], 1775)	*Papilio ilia*	
Nymphalinae		
Araschnia levana (Linnaeus, 1758)	*Papilio levana*	
Vanessa virginiensis (Drury, 1773)	*Papilio cardui virginiensis*	
Vanessa cardui (Linnaeus, 1758)	*Papilio cardui*	
Vanessa vulcania Godart, 1819	*Vanessa vulcania*	
Vanessa atalanta (Linnaeus, 1758)	*Papilio atalanta*	
Aglais io (Linnaeus, 1758)	*Papilio io*	
Aglais urticae (Linnaeus, 1758)	*Papilio urticae*	
Aglais ichnusa (Hübner, [1824])	*Papilio ichnusa*	28
Polygonia egea (Cramer, 1775)	*Papilio egea*	
Polygonia c-album (Linnaeus, 1758)	*Papilio c-album*	
Nymphalis vaualbum ([Denis & Schiffermüller], 1775)	*Papilio vau album*	
Nymphalis polychloros (Linnaeus, 1758)	*Papilio polychloros*	
Nymphalis xanthomelas ([Denis & Schiffermüller], 1775)	*Papilio xanthomelas*	
Nymphalis antiopa (Linnaeus, 1758)	*Papilio antiopa*	
Hypolimnas misippus (Linnaeus, 1764)	*Papilio misippus*	
Euphydryas desfontainii (Godart, 1819)	*Papilio desfontainii*	
Euphydryas aurinia (Rottemburg, 1775)	*Papilio aurinia*	
Euphydryas cynthia ([Denis & Schiffermüller], 1775)	*Papilio cynthia*	
Euphydryas iduna (Dalman, 1816)	*Melitaea iduna*	
Euphydryas maturna (Linnaeus, 1758)	*Papilio maturna*	

Taxon	Original combination	Notes
Euphydryas intermedia (Ménétriés, 1859)	*Melitaea maturna intermedia*	
Melitaea trivia ([Denis & Schiffermüller], 1775)	*Papilio trivia*	
Melitaea didyma (Esper, 1778)	*Papilio didyma*	
Melitaea arduinna (Esper, 1783)	*Papilio arduinna*	
Melitaea aetherie (Hübner, [1826])	*Papilio aetherie*	
Melitaea phoebe ([Denis & Schiffermüller], 1775)	*Papilio phoebe*	
Melitaea ornata Christoph, 1893	*Melitaea phoebe ornata*	29
Melitaea cinxia (Linnaeus, 1758)	*Papilio cinxia*	
Melitaea diamina (Lang, 1789)	*Papilio diamina*	
Melitaea celadussa Fruhstorfer, 1910	*Melitaea athalia celadussa*	30
Melitaea deione (Geyer, [1832])	*Papilio deione*	
Melitaea britomartis Assmann, 1847	*Melitaea britomartis*	
Melitaea athalia (Rottemburg, 1775)	*Papilio athalia*	
Melitaea varia Herrich-Schäffer, 1851	*Melitaea varia*	31
Melitaea parthenoides Keferstein, 1851	*Melitaea athalia parthenoides*	
Melitaea aurelia Nickerl, 1850	*Melitaea aurelia*	
Melitaea asteria Freyer, 1828	*Melitaea asteria*	
Libytheinae		
Libythea celtis (Laicharting, 1782)	*Papilio celtis*	
Danainae		
Danaus plexippus (Linnaeus, 1758)	*Papilio plexippus*	
Danaus chrysippus (Linnaeus, 1758)	*Papilio chrysippus*	
Charaxinae		
Charaxes jasius (Linnaeus, 1767)	*Papilio jasius*	
Satyrinae		
Coenonympha phryne (Pallas, 1771)	*Papilio phryne*	
Coenonympha oedippus (Fabricius, 1787)	*Papilio oedippus*	
Coenonympha dorus (Esper, 1782)	*Papilio dorus*	
Coenonympha thyrsis (Freyer, 1845)	*Hipparchia thyrsis*	
Coenonympha pamphilus (Linnaeus, 1758)	*Papilio pamphilus*	
Coenonympha tullia (Müller, 1764)	*Papilio tullia*	
Coenonympha rhodopensis Elwes, 1900	*Coenonympha tiphon rhodopensis*	
Coenonympha amaryllis (Stoll, 1782)	*Papilio amaryllis*	
Coenonympha glycerion (Borkhausen, 1788)	*Papilio glycerion*	
Coenonympha corinna (Hübner, [1804])	*Papilio corinna*	
Coenonympha leander (Esper, 1784)	*Papilio leander*	
Coenonympha hero (Linnaeus, [1760])	*Papilio hero*	10
Coenonympha gardetta (Prunner, 1798)	*Papilio gardetta*	
Coenonympha orientalis Rebel, 1909	*Coenonympha arcania* var. *orientalis*	32
Coenonympha arcania (Linnaeus, [1760])	*Papilio arcania*	10
Kirinia roxelana (Cramer, 1777)	*Papilio roxelana*	
Kirinia climene (Esper, 1783)	*Papilio climene*	
Lopinga achine (Scopoli, 1763)	*Papilio achine*	
Pararge xiphia (Fabricius, 1775)	*Papilio xiphia*	
Pararge xiphioides Staudinger, 1871	*Pararge xiphia xiphioides*	
Pararge aegeria (Linnaeus, 1758)	*Papilio aegeria*	
Lasiommata maera (Linnaeus, 1758)	*Papilio maera*	
Lasiommata deidamia (Eversmann, 1851)	*Hipparchia deidamia*	

Taxon	Original combination	Notes
Lasiommata petropolitana (Fabricius, 1787)	*Papilio maera petropolitana*	
Lasiommata paramegaera (Hübner, [1824])	*Papilio paramegaera*	
Lasiommata megera (Linnaeus, 1767)	*Papilio megera*	
Melanargia russiae (Esper, 1783)	*Papilio russiae*	
Melanargia larissa (Geyer, [1828])	*Papilio larissa*	
Melanargia lachesis (Hübner, 1790)	*Papilio lachesis*	
Melanargia galathea (Linnaeus, 1758)	*Papilio galathea*	
Melanargia ines (Hoffmansegg, 1804)	*Papilio ines*	
Melanargia arge (Sulzer, 1776)	*Papilio arge*	
Melanargia pherusa (Boisduval, 1833)	*Arge pherusa*	
Melanargia occitanica (Esper, [1793])	*Papilio arge occitanica*	
Hipparchia fatua Freyer, 1843	*Hipparchia fatua*	33
Hipparchia statilinus (Hufnagel, 1766)	*Papilio statilinus*	
Hipparchia tilosi Manil, 1984	*Hipparchia wyssii tilosi*	
Hipparchia bacchus (Higgins, 1967)	*Pseudotergumia wyssii bacchus*	
Hipparchia wyssii (Christ, 1889)	*Satyrus fidia wyssii*	
Hipparchia tamadabae Owen & Smith, 1992	*Hipparchia wyssi tamadabae*	
Hipparchia gomera (Higgins, 1967)	*Pseudotergumia wyssii gomera*	
Hipparchia fidia (Linnaeus, 1767)	*Papilio fidia*	
Hipparchia neomiris (Godart, 1823)	*Satyrus neomiris*	34
Hipparchia autonoe (Esper, 1783)	*Papilio autonoe*	
Hipparchia hermione (Linnaeus, 1764)	*Papilio hermione*	
Hipparchia syriaca (Staudinger, 1871)	*Satyrus hermione syriaca*	
Hipparchia fagi (Scopoli, 1763)	*Papilio fagi*	
Hipparchia mersina (Staudinger, 1871)	*Satyrus semele mersina*	
Hipparchia miguelensis (Le Cerf, 1935)	*Satyrus azorinus miguelensis*	
Hipparchia azorina (Strecker, 1899)	*Satyrus azorinus*	5, 35
Hipparchia senthes (Fruhstorfer, 1908)	*Eumenis semele senthes*	
Hipparchia maderensis (Bethune-Baker, 1891)	*Satyrus semele maderensis*	
Hipparchia semele (Linnaeus, 1758)	*Papilio semele*	
Hipparchia blachieri (Fruhstorfer, 1908)	*Eumenis semele blachieri*	
Hipparchia aristaeus (Bonelli, 1826)	*Papilio aristaeus*	
Hipparchia volgensis (Mazokhin-Porshnyakov, 1952)	*Satyrus semele volgensis*	
Hipparchia neapolitana (Stauder, 1921)	*Satyrus neapolitana*	
Hipparchia leighebi Kudrna, 1976	*Hipparchia semele leighebi*	
Hipparchia pellucida (Stauder, 1924)	*Satyrus semele pellucida*	36
Hipparchia sbordonii Kudrna, 1984	*Hipparchia sbordonii*	
Hipparchia cypriensis (Holik, 1949)	*Satyrus semele cypriensis*	
Hipparchia cretica (Rebel, 1916)	*Satyrus semele cretica*	
Hipparchia christenseni Kudrna, 1977	*Hipparchia christenseni*	
Minois dryas (Scopoli, 1763)	*Papilio dryas*	
Brintesia circe (Fabricius, 1775)	*Papilio circe*	
Arethusana arethusa ([Denis & Schiffermüller], 1775)	*Papilio arethusa*	
Oeneis tarpeia (Pallas, 1771)	*Papilio tarpeia*	
Oeneis bore (Schneider, 1792)	*Papilio bore*	
Oeneis ammon Elwes, 1899	*Oeneis bore* var. *ammon*	37
Oeneis melissa (Fabricius, 1775)	*Papilio melissa*	
Oeneis magna Graeser, 1888	*Oeneis jutta magna*	

Taxon	Original combination	Notes
Oeneis jutta (Hübner, [1806])	*Papilio jutta*	
Oeneis norna (Thunberg, 1791)	*Papilio norna*	
Oeneis polixenes (Fabricius, 1775)	*Papilio polixenes*	
Oeneis glacialis (Moll, 1785)	*Papilio glacialis*	38
Satyrus ferula (Fabricius, 1793)	*Papilio ferula*	
Satyrus virbius Herrich-Schäffer, 1844	*Satyrus virbius*	
Satyrus actaea (Esper, 1781)	*Papilio actaea*	
Chazara briseis (Linnaeus, 1764)	*Papilio briseis*	
Chazara prieuri (Pierret, 1837)	*Satyrus prieuri*	
Chazara persephone (Hübner, [1805])	*Papilio persephone*	
Pseudochazara geyeri (Herrich-Schäffer, 1846)	*Satyrus geyeri*	
Pseudochazara graeca (Staudinger, 1870)	*Satyrus pelopea graeca*	
Pseudochazara amymone Brown, 1976	*Pseudochazara amymone*	
Pseudochazara anthelea (Hübner, [1824])	*Papilio anthelea*	
Pseudochazara amalthea (Frivaldszky, 1845)	*Hipparchia amalthea*	39
Pseudochazara williamsi (Romei, 1927)	*Satyrus hippolyte williamsi*	
Pseudochazara euxina (Kuznetsov, 1909)	*Hipparchia euxina*	
Pseudochazara mercurius (Staudinger, 1887)	*Satyrus mercurius*	40
Pseudochazara cingovskii (Gross, 1973)	*Satyrus sintenisi cingovskii*	
Pseudochazara tisiphone Brown, [1981]	*Pseudochazara cingovskii tisiphone*	39
Pseudochazara orestes De Prins & van der Poorten, 1981	*Pseudochazara orestes*	
Ypthima asterope (Klug, 1832)	*Hipparchia asterope*	
Proterebia phegea (Borkhausen, 1788)	*Papilio phegea*	41
Hyponephele huebneri Koçak, 1980	*Hyponephele huebneri*	
Hyponephele lycaon (Kühn, 1774)	*Papilio lycaon*	
Hyponephele lupina (Costa, 1836)	*Satyrus lupinus*	5
Aphantopus hyperantus (Linnaeus, 1758)	*Papilio hyperantus*	
Pyronia cecilia (Vallantin, 1894)	*Epinephele ida cecilia*	
Pyronia tithonus (Linnaeus, 1771)	*Papilio tithonus*	42
Pyronia bathseba (Fabricius, 1793)	*Papilio bathseba*	
Maniola jurtina (Linnaeus, 1758)	*Papilio jurtina*	
Maniola nurag (Ghiliani, 1852)	*Satyrus nurag*	
Maniola chia Thomson, 1987	*Maniola chia*	
Maniola megala (Oberthür, 1909)	*Epinephele janira megala*	
Maniola cypricola (Graves, 1928)	*Epinephele cypricola*	
Maniola telmessia (Zeller, 1847)	*Hipparchia telmessia*	
Maniola halicarnassus Thomson, 1990	*Maniola halicarnassus*	
Erebia edda Ménétriés, 1851	*Erebia edda*	
Erebia fasciata Butler, 1868	*Erebia fasciata*	
Erebia discoidalis (Kirby, 1837)	*Hipparchia discoidalis*	
Erebia rossii (Curtis, 1835)	*Hipparchia rossii*	43
Erebia cyclopius (Eversmann, 1844)	*Hipparchia cyclopius*	
Erebia embla (Thunberg, 1791)	*Papilio embla*	
Erebia disa (Thunberg, 1791)	*Papilio disa*	
Erebia meolans (Prunner, 1798)	*Papilio meolans*	
Erebia dabanensis Erschoff, 1872	*Erebia dabanensis*	44
Erebia jeniseiensis Trybom, 1877	*Erebia ligea jeniseiensis*	
Erebia claudina (Borkhausen, 1789)	*Papilio claudina*	

Taxon	Original combination	Notes
Erebia manto ([Denis & Schiffermüller], 1775)	*Papilio manto*	
Erebia ottomana Herrich-Schäffer, 1847	*Erebia dromus ottomana*	
Erebia hispania Butler, 1868	*Erebia hispania*	
Erebia rondoui Oberthür, 1908	*Erebia rondoui*	
Erebia callias Edwards, 1871	*Erebia callias*	45
Erebia tyndarus (Esper, 1781)	*Papilio tyndarus*	
Erebia cassioides (Hohenwarth, 1792)	*Papilio cassioides*	46
Erebia nivalis Lorković & Lesse, 1954	*Erebia nivalis*	
Erebia neleus (Freyer, 1832)	*Hipparchia neleus*	47
Erebia calcarius Lorković, 1953	*Erebia tyndarus calcarius*	
Erebia arvernensis Oberthür, 1908	*Erebia tyndarus arvernensis*	47
Erebia oeme (Hübner, [1804])	*Papilio oeme*	
Erebia gorge (Hübner, [1804])	*Papilio gorge*	
Erebia sthennyo Graslin, 1850	*Erebia sthennyo*	
Erebia pandrose (Borkhausen, 1788)	*Papilio pandrose*	
Erebia eriphyle (Freyer, 1836)	*Hipparchia eriphyle*	
Erebia epistygne (Hübner, [1819])	*Papilio epistygne*	
Erebia euryale (Esper, 1805)	*Papilio euryale*	
Erebia palarica Chapman, 1905	*Erebia palarica*	
Erebia ligea (Linnaeus, 1758)	*Papilio ligea*	
Erebia pluto (Prunner, 1798)	*Papilio pluto*	
Erebia aethiopellus (Hoffmansegg, 1806)	*Papilio aethiopellus*	
Erebia gorgone Boisduval, 1833	*Erebia gorgone*	
Erebia rhodopensis Nicholl, 1900	*Erebia gorgone rhodopensis*	
Erebia mnestra (Hübner, [1804])	*Papilio mnestra*	
Erebia albergana (Prunner, 1798)	*Papilio alberganus*	5
Erebia sudetica Staudinger, 1861	*Erebia melampus sudetica*	
Erebia melampus (Fuessly, 1775)	*Papilio melampus*	
Erebia triarius (Prunner, 1798)	*Papilio triarius*	
Erebia polaris Staudinger, 1861	*Erebia medusa* var. *polaris*	48
Erebia medusa ([Denis & Schiffermüller], 1775)	*Papilio medusa*	
Erebia aethiops (Esper, 1777)	*Papilio aethiops*	
Erebia pharte (Hübner, [1804])	*Papilio pharte*	
Erebia christi Rätzer, 1890	*Erebia christi*	
Erebia orientalis Elwes, 1900	*Erebia epiphron orientalis*	
Erebia epiphron (Knoch, 1783)	*Papilio epiphron*	
Erebia flavofasciata Heyne, 1895	*Erebia flavofasciata*	
Erebia montana (Prunner, 1798)	*Papilio montanus*	5
Erebia styx (Freyer, 1834)	*Hipparchia styx*	
Erebia stiria (Godart, [1824])	*Satyrus stirius*	5
Erebia scipio Boisduval, 1833	*Erebia scipio*	49
Erebia pronoe (Esper, 1780)	*Papilio pronoe*	
Erebia melas (Herbst, 1796)	*Papilio melas*	
Erebia lefebvrei (Boisduval, 1828)	*Satyrus lefebvrei*	
Erebia zapateri Oberthür, 1875	*Erebia zapateri*	
Erebia neoridas (Boisduval, 1828)	*Satyrus neoridas*	

Table 3. Annotations to the updated checklist of the butterflies of Europe.

1	*Iphiclides feisthamelii* is considered a separate species based on differences in adult morphology (Coutsis and van Oorschot 2011, Lafranchis et al. 2015) and nuclear genetic markers (Wiemers and Gottsberger 2010; Dincă et al. 2015), despite very local hybridisation along the contact zone in southern France (Lafranchis et al. 2015) and extensive mitochondrial introgression in the Iberian Peninsula (Wiemers and Gottsberger 2010; Dincă et al. 2015). Its distribution includes the SW part of France, the Iberian Peninsula, and northern Africa.
2	Author of the name is Giuseppe Gené (1800–1847), not Achille Guenée.
3	Dapporto (2009) has shown that *Zerynthia cassandra* from peninsular Italy is a separate species based on differences in genital morphology. This was further confirmed by molecular studies (Zinetti et al. 2013).
4	*Spialia rosae* has been recognised as a separate species endemic to mountains of Spain based on differences in ecology and evidence from molecular studies (mitochondrial DNA, chemical profiles) (Hernández-Roldán et al. 2016, 2018). The species has already been included in Fauna Europaea (2018).
5	Gender agreement changes were applied consistently in accordance with Art. 31.2 and Art. 34.2 (ICZN 1999).
6	As descriptions of both *Syrichtus alveus f. foulquieri* and *Syrichtus alveus f. bellieri* were published simultaneously (Oberthür, 1910), the name used by the first reviser (i. e. Rebel 1914), *Pyrgus foulquieri*, should be used in accordance with Art. 24.2.1 and Art. 24.2.2 (ICZN 1999).
7	Recent studies have shown that *Leptidea reali* actually comprises two species, *L. reali* and *L. juvernica*. *L. reali* is known from south-western Europe (Spain, S France and Italy) and is replaced by *L. juvernica* in the rest of the continent (Dincă et al. 2011b). *L. sinapis*, *L. reali,* and *L. juvernica* are reproductively isolated due to female mate choice (Dincă et al. 2013).
8	The year of the publication of the name *Anteos cleobule* is 1831, not 1830 (the original plate [79], published in 1824, carried no names).
9	The name *Papilio croceus* should be credited to Geoffroy in Fourcroy, 1785, not to Fourcroy (Ganglbauer and Heyden 1906, D'Aguilar and Raimbault 1990, Grieshuber et al. 2012).
10	The date of the publication of the names by Linnaeus in Fauna Svecica (ed. 2) is 14 November 1760, not 1761 (see Evenhuis 1997, Bousquet 2016).
11	The year of the publication of the name *Pieris balcana* is 1969, not 1970. The publication year of volume 21 (1–4) (1968) of *Biološki glasnik* [= volume 70 of *Periodicum Biologorum*] is printed on the cover page as "1969" and, moreover, Lorković´s personal copy held in the Croatian Natural History museum has a hand written addition of the publication year "1969" in the header of his article (Šašić, pers. comm.). Additionally, the author´s name is misspelled and should be Lorković (see also Lorković 1969).
12	According to Lvovsky and Morgun (2007) the species is present in Russia south of the Urals in the Orenburg region. The subspecies *Lycaena dimorpha irghiza* was originally described as a subspecies of *L. japhetica* (Nekrutenko 1985), but we follow the decision in the taxonomic review by Lukhtanov (2000).
13	The year of the publication of the name *Polyommatus ottomanus* is 1831, not 1830. Lefèbvre cited the date 1830, which corresponds to the date of submission of his article, but the issue of the journal was published in January 1831. See Lefèbvre (1831)
14	The generic names *Apharitis* and *Spindasis* were synonymised with *Cigaritis* due to morphological similarities (see Heath and Pringle 2011).
15	The name *Papilio roboris* was first published in 1793, not 1789 (Lamas 2013).
16	*Iolana debilitata* has been recognised as a separate species based on constant differences in adult morphology (Dumont 2004) and mitochondrial DNA – barcoding gene (Dincă et al. 2015).
17	The year of the publication of the name and plates for *Cupido lorquinii* is 1850, not 1847 (Hemming 1937, Heppner 1982).
18	Genus level classification in the subfamily Polyommatinae follows Talavera et al. (2013) based on molecular phylogeny. This arrangement partially concurs with differences in genital morphology (see Balletto et al. 2014, Coutsis 2017).
19	The year of the publication of the name *Lycaena trochylus* is 1844, not 1845 (Tremewan 1988, Olivier 2000).
20	The year of the publication of the name *Polyommatus nicias* is ante September 1829, not 1830 (Griffin 1931).
21	*Polyommatus celina* has been recognised as a separate species distributed in the Iberian Peninsula, northern Africa, Sardinia and Sicily based on molecular markers and adult morphology (Wiemers et al. 2010; Dincă et al. 2011a).
22	The author´s surname Sagarra should be without the particle "de". It is listed as such in the members list of the Institució Catalana d'Història Natural in 1925 bulletin Vol. 5 – Num. 1. Generally, when the particle is written in lowercase, it should be treated as a suffix that goes after the first name (Welter-Schultes 2013).
23	*Polyommatus timfristos* is considered a separate species due to differences in haploid chromosome number compared to *P. aroaniensis* and mitochondrial DNA – barcoding gene (Vishnevskaya et al. 2016).

24	Genus level classification in the tribe Argynnini follows De Moya et al. (2017) based on molecular phylogenetics. It is corroborated by extensive differences in genital morphology (Simonsen 2006a, 2006b).
25	The name *Papilio eunomia* was first published in 1800, not 1799 (Poche, 1938).
26	The name *Papilio thore* was first published in 1804, not 1803 (Hemming 1937).
27	Description of *Boloria freija* and *Boloria frigga* must be credited to Thunberg, not to Becklin (Thunberg wrote Becklin's dissertation), see Karsholt and Nielsen (1986).
28	*Papilio ichnusa* was first described by Hübner (ante 23 December) 1824. *Vanessa ichnusa* Bonelli was published in February 1825 and is a junior secondary homonym and junior subjective synonym, see Hemming (1937).
29	Among the species with red headed larvae within the *Melitaea phoebe* species group only *M. ornata* is present in Europe in southeastern Russia, the Balkan Peninsula, Spain, southeastern France, and southern Italy. *M. telona* is limited to the Levant and *M. punica* to northern Africa (Toth et al. 2014).
30	*Melitaea celadussa* Fruhstorfer, 1910 is considered a separate species distributed in western Europe that differs in genital morphology (Higgins 1932) and molecular markers (Leneveu et al. 2009, Dincă et al. 2015) from *M. athalia*, with hybrids known from the contact zone (Achtelik 2006; Oorschot and Coutsis 2014). The species was referred to also as *M. nevadensis* Oberthür, 1904, which is a junior primary homonym of *Melitaea parthenie* var. *nevadensis* Spuler, 1901, currently regarded as a junior subjective synonym of *Melitaea parthenoides* Keferstein, 1851.
31	*Melitaea varia* was first described by Herrich-Schäffer (1851) in *Systematische Bearbeitung der Schmetterlinge von Europa* Vol. 6(48): 2 (Hemming 1937). *Melitaea parthenie* var. *varia* Meyer-Dür, 1852 (not 1851) is a junior primary homonym.
32	The name *Coenonympha arcánia* var. *orientális* [sic] appeared in part 4 of the ninth edition of Berge's *Schmetterlingsbuch*, which was published on 22 May 1909 (Lempke 1949), not in 1910.
33	The name *Hipparchia fatua* was first published in 1843, not 1844 (Olivier 2000).
34	The name *Satyrus neomiris* was first published in 1823, not 1822. *Satyrus neomiris* first appeared on page 19 in Godart's *Tableau méthodique des lépidoptères...*, published in 1823. The vernacular name Godart used in vol. 2 of *Hist. nat. Lépid. Pap. France*, pp. 88–89, pl. 11, figs. 1–2 (1822), »Satyre néomiris«, is unavailable, as it is not a scientific name.
35	The name *Satyrus azorinus* was first published in 1899, not 1898.
36	The name *Satyrus semele pellucida* was first published on 15 May 1924, not in 1923.
37	*Oeneis ammon* is present in Europe in the Polar Urals (Tsvetkov 2006).
38	The name *Papilio glacialis* was first published in 1785, not 1783.
39	Based on differentiation in mtDNA (barcodes) and differences in morphology, *Pseudochazara amalthea* and *P. tisiphone* are considered separate species from allopatric *P. anthelea* and *P. mniszechii* respectively (Verovnik and Wiemers 2016).
40	*Pseudochazara hippolyte* (Esper, 1783) is a junior primary homonym of *Papilio hyppolite* Drury, 1782. The oldest available name for this taxon is *Satyrus mercurius* Staudinger, 1887.
41	*Papilio afer* Esper, 1783 is a junior primary homonym of *Papilio afer* Drury, 1782 (see Koçak 1981), as is *Papilio afra* Fabricius, 1787, because it differs only in gender. Therefore the oldest available name is *Papilio phegea* Borkhausen, 1788.
42	The name *Papilio tithonus* was first published in 1771 in *Mantissa Plantarum Altera*, not in 1767.
43	The name *Hipparchia rossii* was first published in November 1835, not in 1834.
44	The name *Erebia dabanensis* was published on 13 November 1872, not in 1871.
45	Recently, a population of *Erebia* was discovered in the Polar Urals and described as a new species, *E. churkini* Bogdanov, 2008, but is now considered a subspecies of *Erebia callias* (Tatarinov & Gorbunov, 2015). However, no further material is available, therefore it is tentatively considered as part of the European fauna. *Erebia callias* is a member of the *tyndarus* group (Albre et al. 2008) and ranges from the mountains of the Asian part of Russia and Mongolia to Colorado (USA).
46	The author of the name *Papilio cassioides* is Hohenwarth alone as indicated on page III of Reiner and Hohenwarth (1792), not Reiner and Hohenwarth.
47	Based on molecular data and differences in wing patterns *Erebia cassioides* has been split into three allopatric species (Schmitt et al. 2016). *E. cassioides* is limited to the eastern Alps, *E. arvernensis* is distributed in the western Alps, Cantabrian mountains and Pyrénées, while *E. neleus* is present in the mountains of the Balkan Peninsula and the southern Carpathians.
48	The name *Erebia medusa polaris* was first published in September 1861, not in 1871.
49	The year of publication of the name *Erebia scipio* by Boisduval is 1833, not 1832 (Cowan 1970).

Table 4. Species richness of European butterfly families and subfamilies.

Family	Subfamily	Genera	Species
Hesperiidae		**13**	**47**
	Hesperiinae	6	11
	Heteropterinae	2	3
	Pyrginae	5	33
Lycaenidae		**39**	**130**
	Aphnaeinae	1	1
	Lycaeninae	1	13
	Polyommatinae	30	98
	Theclinae	7	18
Nymphalidae		**41**	**246**
	Apaturinae	1	3
	Charaxinae	1	1
	Danainae	1	2
	Heliconiinae	6	32
	Libytheinae	1	1
	Limenitidinae	2	5
	Nymphalinae	8	37
	Satyrinae	21	165
Papilionidae		**5**	**15**
	Papilioninae	2	5
	Parnassiinae	3	10
Pieridae		**11**	**57**
	Coliadinae	3	18
	Dismorphiinae	1	5
	Pierinae	7	34
Riodinidae		**1**	**1**
	Nemeobiinae	1	1
Total	**21**	**110**	**496**

A larger number of changes concern the genus names. Most of them are in the family Lycaenidae, where 26 species changed their genus name, mainly based on the molecular study by Talavera et al. (2013), which substantially improved our knowledge of phylogenetic relationships of the subtribe Polyommatina. However, none of the genus names is new and many of them have already been used with the same species. In addition, four species formerly placed in the genus *Argynnis* were transferred into the genera *Fabriciana* and *Speyeria*, based on the study by De Moya et al. (2017). The former genus name had already been used previously for the same species, whereas the latter seems new to European lepidopterists, but is commonly used in North America. Although it could be argued that the change was avoidable by keeping a larger genus *Argynnis*, a solution originally also favoured by Simonsen et al. (2006), this would have meant to rename a large number of North American butterflies currently placed in the genus *Speyeria*, and was rejected by North American lepidopterists. Therefore, the recommended changes appear to cause the least changes on a global level and will hopefully contribute to a more consistent taxonomy of Holarctic Argynnini.

Table 5. Authors of currently valid European butterfly species (with a minimum of three described taxa).

Author	Life data	Nationality	Species	Period
Linnaeus, Carolus	1707–1778	Swedish	71	1758–1771
Poda von Neuhaus, Nicolaus (Nikolaus)	1723–1798	Austrian	4	1761
Scopoli, Giovanni Antonio	1723–1788	Italian	4	1763
Pallas, Peter Simon	1741–1811	German	8	1771
Schiffermüller, Johann Ignaz	1727–1806	Austrian	21	1775
Fabricius, Johan Christian	1745–1808	Danish	16	1775–1793
Rothenburg [alias Rottemburg], Siegmund Adrian von	1745–1797	German	8	1775
Esper, Eugen Johann Christoph	1742–1810	German	32	1777–1805
Bergsträsser, Johann Andreas Benignus	1732–1812	German	5	1779–1780
Knoch, August Wilhelm	1742–1818	German	3	1781–1783
Borkhausen, Moritz Balthasar	1760–1806	German	4	1788–1789
Hübner, Jacob	1761–1826	German	31	1790–1831
Thunberg, Carl Peter	1743–1828	Swedish	5	1791
Schneider, David Hinrich	1755–1826	German	3	1792–1794
Prunner, Leonhard von	17??–1830	German	8	1798
Hoffmansegg, Johann Centurius Graf von	1766–1849	German	6	1804–1806
Ochsenheimer, Ferdinand	1767–1822	German	4	1808–1816
Godart, Jean Baptiste	1775–1825	French	6	1819–1824
Freyer, Christian Friedrich	1794–1885	German	16	1828–1851
Boisduval, Jean Baptiste Alphonse Dechauffour de	1799–1879	French	13	1828–1848
Geyer, Carl	1802–1889	German	4	1828–1832
Klug, Johann Christoph Friedrich	1775–1856	German	4	1829–1834
Meigen, Johann Wilhelm	1764–1845	German	3	1829
Eversmann, Eduard Friedrich von	1794–1860	Russian	14	1832–1851
Rambur, Jules Pierre	1801–1870	French	10	1832–1839
Herrich-Schäffer, Gottlieb August Wilhelm	1799–1874	German	14	1844–1852
Zeller, Philipp Christoph	1808–1883	German	4	1847
Lederer, Julius	1821–1870	Austrian	3	1855–1864
Staudinger, Otto	1830–1900	German	17	1860–1901
Butler, Arthur Gardiner	1844–1925	British	6	1868–1898
Oberthür, Charles	1845–1924	French	9	1875–1910
Rebel, Hans	1861–1940	Austrian	5	1894–1916
Elwes, Henry John	1846–1922	British	3	1899–1900
Chapman, Thomas Algernon	1842–1921	British	3	1905–1920
Fruhstorfer, Hans	1866–1922	German	3	1908–1910
Verity, Ruggero	1883–1959	Italian	5	1921–1928
Kudrna, Otakar	1939–	Czech	3	1976–1984
Brown, John	19??–	British	3	1976–1981

Finally, quite a number of minor changes have been implemented, which correct mistakes in names of authors, year of publication, or the incorrect use of parentheses for species that have changed generic combinations. An example is the change of year for 6 butterfly names due to a correction of the publication date of Linnaeus' Fauna Svecica. Evenhuis (1997: 480) has shown convincingly that this edition was actually published on [14 November 1760], not "1761" as stated in the title page of the work and Bousquet (2016) also agrees with that year of publication.

Table 6. Butterfly species excluded from the European list with explanations.

Turanana panagaea (Herrich-Schäffer, 1851)	Distributed outside Europe in the Asian part of Turkey and replaced by *Turanana taygetica* in Europe (Hesselbarth et al. 1995; Coutsis 2005). [Junior subjective synonym of *Lycaena endymion* Gerhard, 1851; misspelled as *Turanana panagea* in Fauna Europaea]
Polyommatus eleniae Coutsis & De Prins, 2005	Considered conspecific with *Polyommatus orphicus* based on the equal haploid chromosome number and no differences in mitochondrial DNA – barcoding gene (Vishnevskaya et al. 2016).
Polyommatus galloi (Balletto & Toso, 1979)	According to the molecular study of Vila et al. (2010) *P. galloi* represents an isolated population of *Polyommatus ripartii* and is not considered as a separate species.
Polyommatus menalcas (Freyer, 1837)	Distributed outside Europe in Asian part of Turkey (Hesselbarth et al. 1995).
Polyommatus pljushtchi Lukhtanov & Budashkin, 1993	Species status is based on erroneous sequences (opinion in Kudrna et al. (2011); Shapoval and Lukhtanov (2015).) Considered here as ssp. of *Polyommatus damone* (Eversmann, 1841).
Melitaea punica Oberthür, 1876	Distributed outside Europe in northern Africa (Toth et al. 2014).
Melitaea telona Fruhstorfer, 1908	Distributed outside Europe in Levant (Toth et al. 2014).
Pseudochazara mniszechii (Herrich-Schäffer, 1851)	Distributed outside Europe in Asian part of Turkey (Hesselbarth et al. 1995). *P. tisiphone*, often considered as a subspecies of *P. mniszechii*, was shown not to be closely related to it (Verovnik and Wiemers 2016).
Pseudochazara beroe (Freyer, 1843)	Distributed outside Europe in Asian part of Turkey (Hesselbarth et al. 1995).

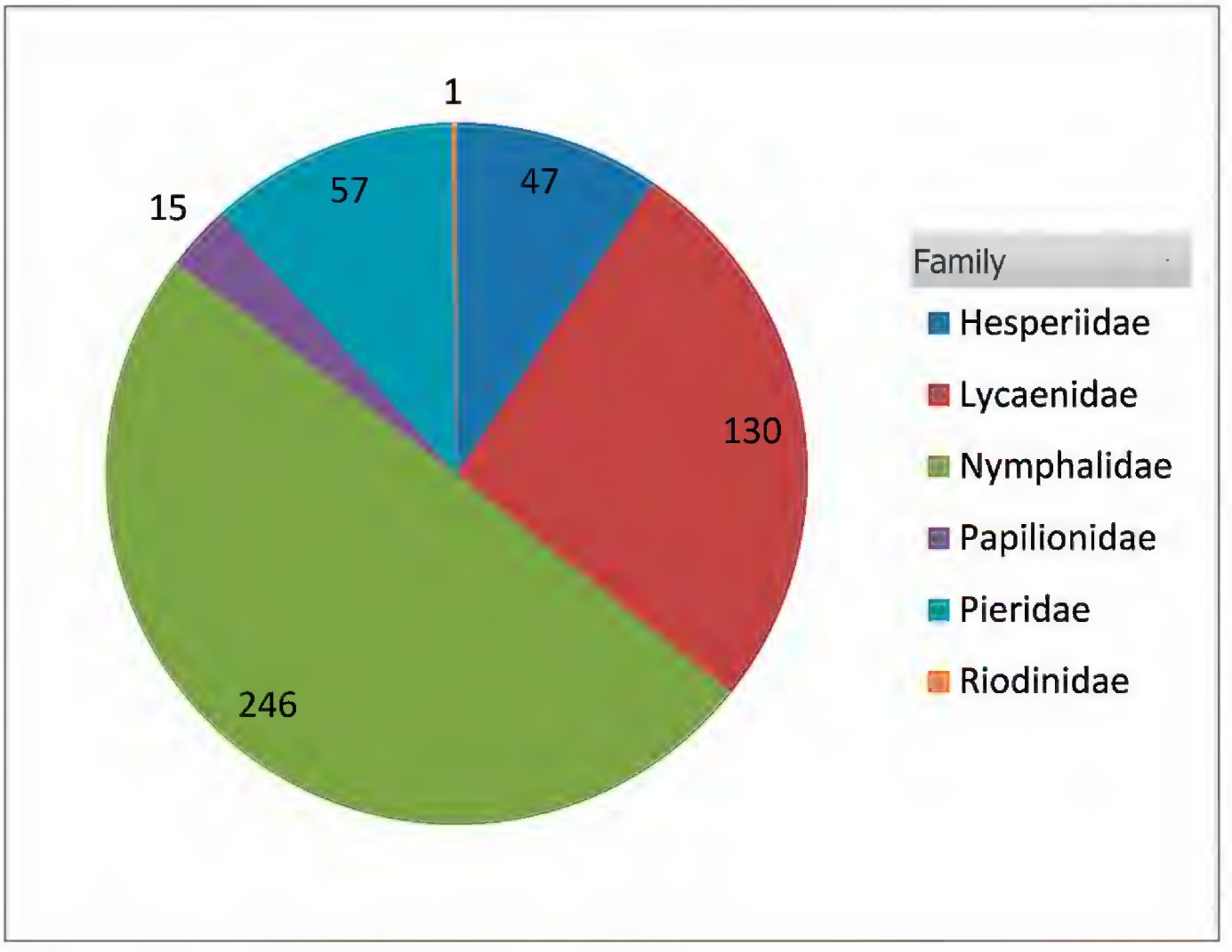

Figure 4. Species richness of butterfly families in Europe.

Table 7. List of the 14 European butterfly species that are affected by the gender agreement provision.

Name	Original species epithet
Agriades pyrenaicus	*pyrenaica*
Carcharodus tripolinus	*tripolina*
Colias crocea	*croceus*
Cupido decoloratus	*decolorata*
Erebia aethiopella	*aethiopellus*
Erebia albergana	*alberganus*
Erebia montana	*montanus*
Erebia stiria	*stirius*
Hipparchia azorina	*azorinus*
Hyponephele lupina	*lupinus*
Kretania hesperica	*hespericus*
Lycaena dimorpha	*dimorphus*
Lycaena ottomana	*ottomanus*
Tarucus balkanicus	*balkanica*

Conclusions

Taking into account the many recent research findings, especially those with molecular methods, we think that the new taxonomy represents a step forward in stabilizing European butterfly taxonomy and nomenclature. Nevertheless, we have to note that some groups, e.g., the genera *Euchloe*, *Callophrys*, *Pseudophilotes*, *Melitaea*, and *Hipparchia*, as well as the subgenus *Agrodiaetus* of the genus *Polyommatus* are still in need of revision, which will certainly lead to additional changes in the future. Furthermore, we still have large knowledge gaps for species in other regions of the Palearctic region (especially in Central Asia), which might require changes in order to achieve a consistent taxonomy of Palearctic and Holarctic butterflies.

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Appendix I

Evidence that the junior synonym *Polyommatus ottomanus* Lefèbvre, 1831 has been used to denote the taxon currently known as *Lycaena ottomana* (Lefèbvre, [1831]), in at least 25 works, published by at least 10 authors during the last 50 years and encompassing a span of not less than 10 years, and thus fulfilling the conditions of article 23.9.1.2 of the code in order to reverse the precedence of *Lycaena legeri* Freyer, 1830.

Already during the decades immediately following the publication of *legeri* Freyer, this name does not seem to have been used but as a subjective junior synonym of *ot-*

tomanus Lefèbvre. The latter name was thought to represent the valid name and was first used in its original combination (*Polyommatus ottomanus*) and starting from the 20th century mostly in the combination of *Chrysophanus ottomanus*:

- Brullé (1832): *Polyommatus ottomanus* Lef.
- Herrich-Schäffer (1843): *Polyomm. Ottomanus* Lef.; synonym: *Legeri*
- Mann (1862): *Polyommatus ottomanus* Lef.
- Lang (1884): *Polyommatus Ottomanus,* Lefebrve [sic]; synonym: *Legeri,* Frr.
- Rebel (1903): *Chrysophanus Ottomanus* Lef.
- Spuler (1908): *Chrysóphanus ottománus* Lef.
- Courvoisier (1921): *Chrysophanus ottomanus* Lefebvre 1830; synonym: *legeri* Freyer, 1832
- Galvagni (1924): *Chrysophanus ottomanus* Lef.
- Rebel and Zerny (1934): *Chrysophanus ottomanus* Lef.
- Kanus (1963): *Heodes* (*Chrysophanus*) *ottomanus* Lef.

During the last 50 years we are not aware of any use of *legeri* Freyer, except as a subjective junior synonym of *ottomanus* Lefèbvre. The latter name was mostly used in the combination of *Heodes ottomanus* and later as *Lycaena ottomanus* or, due to the gender agreement rule of the code, as *Lycaena ottomana*:

1. Higgins and Riley (1970): *Heodes ottomanus* Lefèbvre, 1830
2. Higgins (1975): *Heodes ottomanus* Lefèbvre 1830
3. Higgins and Riley (1978): *Heodes ottomanus* Lefèbvre 1830
4. Schmidt-Koehl (1980): *Heodes ottomanus* Lefebvre, 1830
5. Krzywicki (1981): *Heodes ottomanus* Lefevre [sic]
6. Wiemers (1983): *Heodes ottomanus ottomanus* Lef.
7. Higgins and Riley (1983): *Heodes ottomanus* Lefèbvre, 1830
8. Kudrna (1986): *Lycaena ottomanus* Lefebvre, 1830
9. Jakšić (1988): *Lycaena ottomanus* Lefèbvre, 1830
10. Schaider and Jakšić (1989): *Lycaena ottomanus* Lef.
11. Hesselbarth et al. (1995): *Lycaena ottomana* (Lefebvre, [1830]); synonym: "Gen. IX. *Lycaena*. 182. Pap. *Legeri*" Freyer, C.F., [Dezember] 1830
12. Karsholt and Razowki (1996): *Lycaena ottomanus* (Lefèbvre, 1830)
13. Pamperis (1997): *Heodes ottomanus*
14. Jakšić (1998): *Lycaena ottomanus* Lefèbvre, 1830
15. Tolman and Lewington (1998): *Lycaena ottomana* (Lefèbvre, 1830)
16. Abadjiev (2001): *Lycaena ottomana* (Lefebvre, [1830])
17. Bozano and Weidenhoffer (2001): *Lycaena ottomanus* (Lefebvre, 1830); synonym: *legeri* Freyer, 1839
18. Mihoci et al. (2005): *Lycaena ottomanus* (Lefèbvre, 1830)
19. Coutsis and Ghavalas (2006): *Lycaena ottomanus* (Lefebvre, 1830)
20. Wagener (2006): *Lycaena ottomanus* (Lefebvre, 1830)
21. Settele et al. (2008): *Lycaena ottomana* (Lefebvre, 1830)

22. Tolman and Lewington (2008): *Lycaena ottomana* Lefèbvre, 1830
23. Pamperis (2009): *Lycaena ottomanus*
24. Van Swaay et al. (2010): *Lycaena ottomana* (Lefèbvre, 1830)
25. Tshikolovets (2011): *Lycaena ottomana* (Lefebvre, [1830]); synonym: *legeri* Freyer, 1839
26. Kemal and Koçak (2011): *Lycaena* (*Heodes*) *ottomanus* (Lefèbvre, [1830]); synonym: *legeri* Freyer, 1830
27. Kudrna et al. (2011): *Lycaena ottomana* (Lefebvre, 1831)
28. Koren et al. (2012): *Lycaena ottomana* (Lefèbvre, 1830)
29. Verovnik & Popović (2012): *Lycaena ottomanus* (Lefèbvre, 1830)
30. Kudrna et al. (2015): *Lycaena ottomana* (Lefebvre, 1831)
31. Çalişkan (2016): *Lycaena ottomanus* (Lefèbvre, [1830])

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Supplementary material 1

Distributional checklist of European butterflies (country checklist)

Authors: Martin Wiemers, Emilio Balletto, Vlad Dincă, Zdenek Faltynek Fric, Gerardo Lamas, Vladimir Lukhtanov, Miguel L. Munguira, Chris A. M. van Swaay, Roger Vila, Albert Vliegenthart, Niklas Wahlberg, Rudi Verovnik

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Link: https://doi.org/10.3897/zookeys.811.28712.suppl1

Supplementary material 2

Distributional checklist of European butterflies (CoL)

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